```
. /*********************************************/
. /*               MANUFACTURING                */
. /*********************************************/
. /*=========================*/
. /*** Vertical spillovers ***/
. /*=========================*/
. replace innoint=innoint*100
(2122 real changes made)

. /* >>>  Uncentered correlation * <<<*/
. replace viaunc=viaunc*10
(1438 real changes made)

. replace vunc  =vunc*10
(2408 real changes made)

. * Customers
. oprobit info_3 innoint vunc br2-br8 size2-size8 ost expd

Iteration 0:   log likelihood = -1245.6507
Iteration 1:   log likelihood = -1073.0939
Iteration 2:   log likelihood = -1070.9182
Iteration 3:   log likelihood = -1070.9168

Ordered probit estimates                          Number of obs   =        977
                                                  LR chi2(18)     =     349.47
                                                  Prob > chi2     =     0.0000
Log likelihood = -1070.9168                       Pseudo R2       =     0.1403

------------------------------------------------------------------------------
      info_3 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .1566868   .0117826     13.298   0.000       .1335933    .1797803
        vunc |   .1097104   .0653364      1.679   0.093      -.0183466    .2377674
         br2 |  -.2023472   .1246112     -1.624   0.104      -.4465806    .0418863
         br3 |  -.4564783   .1256485     -3.633   0.000      -.7027447   -.2102118
         br4 |    .000965   .1479115      0.007   0.995      -.2889363    .2908663
         br5 |  -.1514933   .1420189     -1.067   0.286      -.4298451    .1268586
         br6 |  -.5126787   .1851733     -2.769   0.006      -.8756116   -.1497458
         br7 |  -.3638022   .2108279     -1.726   0.084      -.7770173    .0494129
         br8 |     .08928   .1238655      0.721   0.471      -.1534919    .3320519
       size2 |   .3286702   .2324119      1.414   0.157      -.1268487    .7841892
       size3 |   .5831672   .2189999      2.663   0.008       .1539353    1.012399
       size4 |   .8009176   .2205812      3.631   0.000       .3685865    1.233249
       size5 |   .7866697   .2240839      3.511   0.000       .3474733    1.225866
       size6 |    1.04429   .2183638      4.782   0.000       .6163046    1.472275
       size7 |   1.095814   .2381398      4.602   0.000       .6290685    1.562559
       size8 |   1.248527   .2547599      4.901   0.000       .7492064    1.747847
         ost |  -.0820806   .0904841     -0.907   0.364      -.2594262    .0952649
        expd |     .16745    .107415      1.559   0.119      -.0430796    .3779796
-------------+----------------------------------------------------------------
       _cut1 |   5.927881   3.142173             (Ancillary parameters)
       _cut2 |    6.21399   3.142704
       _cut3 |   6.949833   3.144006
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
```

```
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   25.29
         Prob > chi2 =    0.0007


. test size2 size3 size4 size5 size6 size8

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size8 = 0.0

           chi2(  6) =   48.12
         Prob > chi2 =    0.0000


.
. *  Suppliers
. oprobit info_4 innoint vunc br2-br8 size2-size8 ost expd

Iteration 0:   log likelihood = -1286.7333
Iteration 1:   log likelihood = -1175.9659
Iteration 2:   log likelihood = -1175.6316
Iteration 3:   log likelihood = -1175.6316

Ordered probit estimates                          Number of obs   =        971
                                                  LR chi2(18)     =     222.20
                                                  Prob > chi2     =     0.0000
Log likelihood = -1175.6316                       Pseudo R2       =     0.0863

------------------------------------------------------------------------------
      info_4 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .1079617   .0103254     10.456   0.000       .0877243     .128199
        vunc |   .0361646   .0633784      0.571   0.568      -.0880547    .1603839
         br2 |  -.0480071   .1207724     -0.398   0.691      -.2847166    .1887024
         br3 |  -.3146073   .1220674     -2.577   0.010       -.553855   -.0753595
         br4 |  -.0993222     .14241     -0.697   0.486      -.3784407    .1797962
         br5 |  -.0511189   .1372908     -0.372   0.710      -.3202039    .2179661
         br6 |  -.4377501   .1778869     -2.461   0.014       -.786402   -.0890982
         br7 |  -.2604748   .2059971     -1.264   0.206      -.6642218    .1432721
         br8 |   .0548092   .1187767      0.461   0.644      -.1779888    .2876072
       size2 |   .1804821   .2245482      0.804   0.422      -.2596243    .6205886
       size3 |    .359229   .2112062      1.701   0.089      -.0547276    .7731856
       size4 |   .5578993   .2132241      2.616   0.009       .1399877    .9758109
       size5 |   .6887269   .2166659      3.179   0.001       .2640696    1.113384
       size6 |   .9168815   .2109682      4.346   0.000       .5033914    1.330372
       size7 |   .9476666   .2284386      4.148   0.000       .4999352    1.395398
       size8 |   1.078049   .2413532      4.467   0.000        .605005    1.551092
         ost |  -.0662625   .0869904     -0.762   0.446      -.2367606    .1042356
        expd |    .000214   .1044156      0.002   0.998      -.2044368    .2048649
-------------+----------------------------------------------------------------
       _cut1 |   2.173233   3.047072            (Ancillary parameters)
       _cut2 |   2.773122   3.047637
       _cut3 |   3.716992   3.047536
------------------------------------------------------------------------------
```

```
. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   14.04
         Prob > chi2 =    0.0504


. test size2 size3 size4 size5 size6 size8

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size8 = 0.0

           chi2(  6) =   52.01
         Prob > chi2 =    0.0000


.
. /* >>>  ADAMS * <<<*/
. replace viaadams=viaadams
(0 real changes made)

. replace vadams=vadams
(0 real changes made)

. *  Customers
. oprobit info_3 innoint vadams br2-br8 size2-size8 ost expd

Iteration 0:   log likelihood =  -1246.188
Iteration 1:   log likelihood = -1070.2025
Iteration 2:   log likelihood = -1068.0406
Iteration 3:   log likelihood = -1068.0391

Ordered probit estimates                          Number of obs   =        978
                                                  LR chi2(18)     =     356.30
                                                  Prob > chi2     =     0.0000
Log likelihood = -1068.0391                       Pseudo R2       =     0.1430

------------------------------------------------------------------------------
      info_3 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .1586687   .0118041     13.442   0.000       .1355331    .1818043
      vadams |   .5513078   .2308412      2.388   0.017       .0988673    1.003748
         br2 |  -.1901844   .1244613     -1.528   0.126      -.4341241    .0537553
         br3 |  -.4481692   .1253645     -3.575   0.000      -.6938792   -.2024592
         br4 |   .0046353   .1478456      0.031   0.975      -.2851367    .2944073
         br5 |  -.1167645   .1436058     -0.813   0.416      -.3982266    .1646976
         br6 |  -.5177911   .1841762     -2.811   0.005      -.8787698   -.1568124
         br7 |  -.3625446   .2090031     -1.735   0.083      -.7721831    .0470939
         br8 |   .0785178   .1240926      0.633   0.527      -.1646993    .3217349
       size2 |   .3238864   .2324299      1.393   0.163      -.1316677    .7794406
       size3 |   .5721936   .2189334      2.614   0.009        .143092    1.001295
       size4 |   .7905368   .2202392      3.589   0.000       .3588758    1.222198
```

```
   size5 |   .7721788   .2246846      3.437   0.001        .331805    1.212553
   size6 |   1.058504   .2185626      4.843   0.000       .6301289    1.486879
   size7 |   1.112733   .2379171      4.677   0.000       .6464237    1.579042
   size8 |   1.209325   .2543026      4.755   0.000       .7109011    1.707749
     ost |  -.0917697   .0914442     -1.004   0.316       -.270997    .0874575
    expd |   .1939607   .1071677      1.810   0.070      -.0160841    .4040054
---------+--------------------------------------------------------------------
   _cut1 |   3.288471   1.113928             (Ancillary parameters)
   _cut2 |   3.574848   1.114624
   _cut3 |   4.311459   1.116517
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   24.34
         Prob > chi2 =    0.0010


. test size2 size3 size4 size5 size6 size8

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size8 = 0.0

           chi2(  6) =   48.55
         Prob > chi2 =    0.0000



.
. *  Suppliers
. oprobit info_4 innoint vadams br2-br8 size2-size8 ost expd

Iteration 0:   log likelihood = -1286.7559
Iteration 1:   log likelihood = -1172.9385
Iteration 2:   log likelihood = -1172.5825
Iteration 3:   log likelihood = -1172.5825

Ordered probit estimates                          Number of obs   =        972
                                                  LR chi2(18)     =     228.35
                                                  Prob > chi2     =     0.0000
Log likelihood = -1172.5825                       Pseudo R2       =     0.0887

------------------------------------------------------------------------------
  info_4 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
 innoint |   .1107284   .0103751     10.673   0.000       .0903936    .1310632
  vadams |   .1164697   .2224748      0.524   0.601      -.3195728    .5525122
     br2 |  -.0458505   .1206826     -0.380   0.704       -.282384     .190683
     br3 |  -.3161807   .1217187     -2.598   0.009      -.5547449   -.0776165
     br4 |  -.1008624   .1420776     -0.710   0.478      -.3793294    .1776046
     br5 |  -.0461052   .1388067     -0.332   0.740      -.3181613     .225951
     br6 |    -.43022   .1760985     -2.443   0.015      -.7753666   -.0850733
```

```
     br7 |  -.2765698    .204633     -1.352   0.177       -.677643    .1245035
     br8 |   .0563783   .1190233      0.474   0.636      -.1769032    .2896597
   size2 |    .169119   .2245719      0.753   0.451      -.2710338    .6092719
   size3 |   .3372509   .2112214      1.597   0.110      -.0767355    .7512373
   size4 |   .5614603   .2129045      2.637   0.008       .1441752    .9787453
   size5 |   .6695893   .2173254      3.081   0.002       .2436394    1.095539
   size6 |   .9157039   .2111251      4.337   0.000       .5019064    1.329501
   size7 |   .9601862   .2282015      4.208   0.000       .5129196    1.407453
   size8 |   1.100644   .2421255      4.546   0.000       .6260871    1.575202
     ost |  -.0624631   .0878528     -0.711   0.477      -.2346514    .1097253
    expd |   .0020224   .1040004      0.019   0.984      -.2018147    .2058595
---------+--------------------------------------------------------------------
   _cut1 |   .9971697   1.070919             (Ancillary parameters)
   _cut2 |   1.595533   1.071802
   _cut3 |   2.540374   1.071806
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   14.24
         Prob > chi2 =    0.0470


. test size2 size3 size4 size5 size6 size8

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size8 = 0.0

           chi2(  6) =   54.46
         Prob > chi2 =    0.0000



.
. /* >>>  INKMANN * <<<*/
. replace viainkma=viainkma
(0 real changes made)

. replace vinkma=vinkma/10
(2422 real changes made)

. *  Customers
. oprobit info_3 innoint vinkma br2-br8 size2-size8 ost expd

Iteration 0:   log likelihood = -1257.5022
Iteration 1:   log likelihood = -1077.8833
Iteration 2:   log likelihood = -1075.3281
Iteration 3:   log likelihood =  -1075.326

Ordered probit estimates                          Number of obs   =        986
                                                  LR chi2(18)     =     364.35
                                                  Prob > chi2     =     0.0000
```

```
Log likelihood =  -1075.326                     Pseudo R2       =     0.1449

------------------------------------------------------------------------------
  info_3 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
 innoint |   .1575587   .0117948     13.358   0.000       .1344412    .1806761
  vinkma |   3.136853   1.362191      2.303   0.021       .4670072    5.806699
     br2 |  -.2530593   .1243026     -2.036   0.042      -.4966879   -.0094306
     br3 |  -.5173724   .1251948     -4.133   0.000      -.7627498   -.2719951
     br4 |  -.0403223   .1470322     -0.274   0.784      -.3285001    .2478555
     br5 |  -.2148757   .1431598     -1.501   0.133      -.4954637    .0657123
     br6 |  -.5539873   .1815368     -3.052   0.002      -.9097929   -.1981818
     br7 |  -.3958258   .2085059     -1.898   0.058      -.8044898    .0128381
     br8 |   .0616699   .1238571      0.498   0.619      -.1810856    .3044255
   size2 |   .3374556   .2312867      1.459   0.145       -.115858    .7907693
   size3 |    .567282   .2180061      2.602   0.009       .1399979    .9945662
   size4 |    .835839   .2189273      3.818   0.000       .4067494    1.264929
   size5 |   .8167815   .2230718      3.662   0.000       .3795688    1.253994
   size6 |   1.059297   .2170876      4.880   0.000       .6338128    1.484781
   size7 |   1.109697   .2347038      4.728   0.000       .6496857    1.569708
   size8 |   1.282715   .2522421      5.085   0.000       .7883292      1.7771
     ost |  -.0469283   .0907878     -0.517   0.605       -.224869    .1310125
    expd |   .1899936   .1070126      1.775   0.076      -.0197473    .3997344
---------+--------------------------------------------------------------------
   _cut1 |   2.010984   .6199156             (Ancillary parameters)
   _cut2 |   2.300091    .620694
   _cut3 |   3.040509   .6222626
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   30.39
         Prob > chi2 =    0.0001


. test size2 size3 size4 size5 size6 size8

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size8 = 0.0

           chi2(  6) =   51.47
         Prob > chi2 =    0.0000


.
. *  Suppliers
. oprobit info_4 innoint vinkma br2-br8 size2-size8 ost expd

Iteration 0:   log likelihood = -1300.4868
Iteration 1:   log likelihood = -1186.4874
Iteration 2:   log likelihood = -1186.1013
```

```
Iteration 3:   log likelihood = -1186.1013

Ordered probit estimates                          Number of obs   =        980
                                                  LR chi2(18)     =     228.77
                                                  Prob > chi2     =     0.0000
Log likelihood = -1186.1013                       Pseudo R2       =     0.0880

------------------------------------------------------------------------------
      info_4 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |    .106823   .0102754     10.396   0.000       .0866836    .1269625
      vinkma |   2.166181   1.298628      1.668   0.095      -.3790834    4.711446
         br2 |  -.0682579   .1205094     -0.566   0.571      -.3044519    .1679361
         br3 |  -.3357987    .121411     -2.766   0.006      -.5737599   -.0978375
         br4 |  -.1182205     .14157     -0.835   0.404      -.3956927    .1592517
         br5 |  -.0751963   .1383908     -0.543   0.587      -.3464374    .1960448
         br6 |   -.409878   .1741291     -2.354   0.019      -.7511649   -.0685912
         br7 |  -.2770274   .2038375     -1.359   0.174      -.6765415    .1224867
         br8 |   .0524924   .1189833      0.441   0.659      -.1807106    .2856955
       size2 |   .2066894   .2228829      0.927   0.354       -.230153    .6435318
       size3 |   .3792087     .20972      1.808   0.071       -.031835    .7902524
       size4 |   .5995602    .211034      2.841   0.004       .1859412    1.013179
       size5 |   .7290847   .2151717      3.388   0.001        .307356    1.150813
       size6 |   .9516575    .209254      4.548   0.000       .5415271    1.361788
       size7 |   1.009039   .2250628      4.483   0.000       .5679239    1.450154
       size8 |   1.137452   .2388586      4.762   0.000       .6692979    1.605606
         ost |  -.0420128   .0871409     -0.482   0.630      -.2128059    .1287803
        expd |   .0077197   .1038097      0.074   0.941      -.1957436     .211183
-------------+----------------------------------------------------------------
       _cut1 |    1.38557   .5895176             (Ancillary parameters)
       _cut2 |   1.982542   .5910104
       _cut3 |   2.917647   .5926579
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   14.60
         Prob > chi2 =    0.0415


. test size2 size3 size4 size5 size6 size8

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size8 = 0.0

           chi2(  6) =   55.72
         Prob > chi2 =    0.0000


.
. /* >>>  GEO * <<<*/
```

```
. replace viageo=viageo
(0 real changes made)

. replace vgeo=vgeo
(0 real changes made)

. *  Customers
. oprobit info_3 innoint vgeo br2-br8 size2-size8 ost expd

Iteration 0:   log likelihood = -1237.0462
Iteration 1:   log likelihood = -1065.1058
Iteration 2:   log likelihood = -1062.7921
Iteration 3:   log likelihood = -1062.7902

Ordered probit estimates                          Number of obs   =        969
                                                  LR chi2(18)     =     348.51
                                                  Prob > chi2     =     0.0000
Log likelihood = -1062.7902                       Pseudo R2       =     0.1409

------------------------------------------------------------------------------
      info_3 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .1527839   .0118622     12.880   0.000       .1295343    .1760334
        vgeo |   .0148414   .0208071      0.713   0.476      -.0259398    .0556226
         br2 |  -.2321724   .1251607     -1.855   0.064      -.4774829    .0131381
         br3 |  -.5058114   .1262462     -4.007   0.000      -.7532493   -.2583734
         br4 |  -.0593229   .1490014     -0.398   0.691      -.3513603    .2327144
         br5 |  -.1723066   .1440648     -1.196   0.232      -.4546685    .1100552
         br6 |  -.5918076   .1806237     -3.276   0.001      -.9458236   -.2377916
         br7 |  -.4539581   .2122654     -2.139   0.032      -.8699906   -.0379256
         br8 |   .0218042   .1245285      0.175   0.861      -.2222671    .2658755
       size2 |   .4245234   .2371057      1.790   0.073      -.0401952    .8892421
       size3 |   .6759337   .2231123      3.030   0.002       .2386417    1.113226
       size4 |   .8915352   .2240604      3.979   0.000       .4523849    1.330685
       size5 |   .8631607   .2284499      3.778   0.000       .4154072    1.310914
       size6 |   1.118169   .2220919      5.035   0.000       .6828773    1.553461
       size7 |   1.187329   .2390382      4.967   0.000       .7188224    1.655835
       size8 |   1.349228   .2573448      5.243   0.000       .8448415    1.853615
         ost |  -.0315562   .0916063     -0.344   0.730      -.2111014    .1479889
        expd |     .20983   .1079802      1.943   0.052      -.0018073    .4214673
-------------+----------------------------------------------------------------
       _cut1 |   .7937181   .2277347             (Ancillary parameters)
       _cut2 |    1.08568   .2290361
       _cut3 |   1.814731   .2315856
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   29.01
         Prob > chi2 =    0.0001


. test size2 size3 size4 size5 size6 size8

 ( 1)  size2 = 0.0
```

```
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size8 = 0.0

           chi2(  6) =   49.92
         Prob > chi2 =    0.0000


.
. *  Suppliers
. oprobit info_4 innoint vgeo br2-br8 size2-size8 ost expd

Iteration 0:   log likelihood =  -1278.225
Iteration 1:   log likelihood = -1169.1052
Iteration 2:   log likelihood = -1168.7492
Iteration 3:   log likelihood = -1168.7492

Ordered probit estimates                          Number of obs   =        963
                                                  LR chi2(18)     =     218.95
                                                  Prob > chi2     =     0.0000
Log likelihood = -1168.7492                       Pseudo R2       =     0.0856

------------------------------------------------------------------------------
      info_4 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .1055274   .0103895     10.157   0.000       .0851644    .1258904
        vgeo |  -.0001168   .0198536     -0.006   0.995      -.0390293    .0387956
         br2 |  -.0706098   .1213364     -0.582   0.561      -.3084249    .1672052
         br3 |  -.3525543   .1225599     -2.877   0.004      -.5927673   -.1123413
         br4 |  -.1208098   .1436916     -0.841   0.400      -.4024402    .1608207
         br5 |  -.0824542   .1393394     -0.592   0.554      -.3555543    .1906459
         br6 |  -.4247363   .1722556     -2.466   0.014      -.7623512   -.0871215
         br7 |  -.3793247    .207708     -1.826   0.068      -.7864249    .0277755
         br8 |   .0180445   .1194317      0.151   0.880      -.2160374    .2521263
       size2 |   .2447743    .227101      1.078   0.281      -.2003355    .6898842
       size3 |    .421398   .2131807      1.977   0.048       .0035715    .8392245
       size4 |   .6264317   .2145049      2.920   0.003       .2060099    1.046853
       size5 |   .7228997   .2189685      3.301   0.001       .2937293     1.15207
       size6 |   .9458243   .2125544      4.450   0.000       .5292252    1.362423
       size7 |   1.050833   .2279818      4.609   0.000       .6039968    1.497669
       size8 |    1.13604   .2420599      4.693   0.000       .6616111    1.610469
         ost |  -.0358327   .0878925     -0.408   0.684      -.2080989    .1364335
        expd |  -.0032209   .1047768     -0.031   0.975      -.2085796    .2021378
-------------+----------------------------------------------------------------
       _cut1 |   .4748555   .2169109            (Ancillary parameters)
       _cut2 |   1.072799   .2188913
       _cut3 |   2.016651   .2206385
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   15.92
         Prob > chi2 =    0.0258
```

```
. test size2 size3 size4 size5 size6 size8

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size8 = 0.0

           chi2(  6) =   50.24
         Prob > chi2 =    0.0000


.
. /* >>>  Inkmann/Pohlmeier  <<<*/
. replace viainkpo=viainkpo
(0 real changes made)

. replace vinkpo=vinkpo
(0 real changes made)

. *  Customers
. oprobit info_3 innoint vinkpo br2-br8 size2-size8 ost expd

Iteration 0:   log likelihood = -1257.3626
Iteration 1:   log likelihood = -1081.2098
Iteration 2:   log likelihood = -1078.8921
Iteration 3:   log likelihood = -1078.8904

Ordered probit estimates                          Number of obs   =        987
                                                  LR chi2(18)     =     356.94
                                                  Prob > chi2     =     0.0000
Log likelihood = -1078.8904                       Pseudo R2       =     0.1419

------------------------------------------------------------------------------
      info_3 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .1580504    .011821     13.370   0.000       .1348817    .1812192
      vinkpo |  -.0756436   .2683239     -0.282   0.778      -.6015489    .4502616
         br2 |  -.2188687   .1239879     -1.765   0.078      -.4618805    .0241432
         br3 |  -.4860899   .1242475     -3.912   0.000      -.7296106   -.2425693
         br4 |  -.0233311   .1482832     -0.157   0.875      -.3139608    .2672985
         br5 |  -.1610465   .1416837     -1.137   0.256      -.4387415    .1166486
         br6 |     -.5941   .1858964     -3.196   0.001      -.9584502   -.2297498
         br7 |  -.4204186   .2121442     -1.982   0.048      -.8362135   -.0046236
         br8 |   .0802458     .12362      0.649   0.516      -.1620449    .3225365
       size2 |   .3190842   .2314674      1.379   0.168      -.1345836    .7727519
       size3 |   .5563184   .2179227      2.553   0.011       .1291977    .9834392
       size4 |   .7939903   .2188865      3.627   0.000       .3649807       1.223
       size5 |   .7727499   .2228526      3.468   0.001       .3359669    1.209533
       size6 |   1.030191   .2171332      4.745   0.000       .6046177    1.455764
       size7 |   1.089669   .2369296      4.599   0.000       .6252961    1.554043
       size8 |   1.226253   .2530488      4.846   0.000       .7302862    1.722219
         ost |   -.064432   .0899834     -0.716   0.474      -.2407963    .1119322
        expd |   .1704469   .1070975      1.592   0.111      -.0394603    .3803541
-------------+----------------------------------------------------------------
       _cut1 |    .171704   1.824429             (Ancillary parameters)
       _cut2 |   .4591954   1.824723
       _cut3 |   1.185598   1.824492
------------------------------------------------------------------------------
```

```
. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   29.94
         Prob > chi2 =    0.0001


. test size2 size3 size4 size5 size6 size8

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size8 = 0.0

           chi2(  6) =   48.08
         Prob > chi2 =    0.0000


.
. *  Suppliers
. oprobit info_4 innoint vinkpo br2-br8 size2-size8 ost expd

Iteration 0:   log likelihood = -1300.3423
Iteration 1:   log likelihood = -1185.9449
Iteration 2:   log likelihood = -1185.5717
Iteration 3:   log likelihood = -1185.5716

Ordered probit estimates                          Number of obs   =        981
                                                  LR chi2(18)     =     229.54
                                                  Prob > chi2     =     0.0000
Log likelihood = -1185.5716                       Pseudo R2       =     0.0883

------------------------------------------------------------------------------
      info_4 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .1091537   .0103099     10.587   0.000       .0889466    .1293607
      vinkpo |  -.0999328   .2577296     -0.388   0.698      -.6050735     .405208
         br2 |  -.0491379   .1201567     -0.409   0.683      -.2846406    .1863649
         br3 |  -.3288666   .1206016     -2.727   0.006      -.5652414   -.0924917
         br4 |  -.1019801    .142666     -0.715   0.475      -.3816003    .1776401
         br5 |  -.0500279   .1369123     -0.365   0.715      -.3183712    .2183153
         br6 |  -.4733709   .1775751     -2.666   0.008      -.8214116   -.1253302
         br7 |  -.3508398   .2075574     -1.690   0.091      -.7576448    .0559652
         br8 |   .0566097   .1184937      0.478   0.633      -.1756337    .2888531
       size2 |   .1889184   .2233094      0.846   0.398      -.2487599    .6265967
       size3 |   .3583309   .2099023      1.707   0.088      -.0530702    .7697319
       size4 |   .5795311   .2112942      2.743   0.006       .1654022    .9936601
       size5 |    .700102   .2153288      3.251   0.001       .2780654    1.122139
       size6 |   .9258883   .2095555      4.418   0.000        .515167     1.33661
       size7 |   .9432512   .2270849      4.154   0.000        .498173    1.388329
       size8 |   1.082453   .2400281      4.510   0.000       .6120061    1.552899
         ost |  -.0766291   .0864225     -0.887   0.375      -.2460141     .092756
        expd |  -.0079029   .1037614     -0.076   0.939      -.2112716    .1954657
-------------+----------------------------------------------------------------
```

```
   _cut1 |  -.2304966   1.753049            (Ancillary parameters)
   _cut2 |   .3778135    1.75303
   _cut3 |   1.319671   1.752989
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   16.93
         Prob > chi2 =    0.0179


. test size2 size3 size4 size5 size6 size8

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size8 = 0.0

           chi2(  6) =   52.89
         Prob > chi2 =    0.0000


.
. /*============================*/
. /*** horizontal spillovers ***/
. /*============================*/
. replace hiaunc=hiaunc
(0 real changes made)

. replace hunc=hunc
(0 real changes made)

. * uncentered correlation
. oprobit info_5 innoint hunc br2-br8 size2-size8 ost expd

Iteration 0:   log likelihood = -1312.0331
Iteration 1:   log likelihood = -1172.2901
Iteration 2:   log likelihood = -1171.5263
Iteration 3:   log likelihood = -1171.5261

Ordered probit estimates                          Number of obs   =        981
                                                  LR chi2(18)     =     281.01
                                                  Prob > chi2     =     0.0000
Log likelihood = -1171.5261                       Pseudo R2       =     0.1071

------------------------------------------------------------------------------
  info_5 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
 innoint |    .124762   .0105448     11.832   0.000       .1040945    .1454295
    hunc |  -.0141542   .0341702     -0.414   0.679      -.0811266    .0528183
     br2 |  -.0510424   .1193668     -0.428   0.669       -.284997    .1829122
     br3 |  -.2038055   .1207478     -1.688   0.091      -.4404668    .0328557
     br4 |   .1865858    .141432      1.319   0.187      -.0906158    .4637874
```

```
     br5 |  -.3362775   .1427217     -2.356   0.018      -.6160069    -.056548
     br6 |  -.3014988   .1734913     -1.738   0.082      -.6415356    .0385379
     br7 |  -.2758744   .2032046     -1.358   0.175      -.6741481    .1223994
     br8 |   .0586005   .1193968      0.491   0.624      -.1754128    .2926139
   size2 |   .2875546    .230043      1.250   0.211      -.1633214    .7384306
   size3 |   .5150037   .2156098      2.389   0.017       .0924162    .9375912
   size4 |    .838548   .2162529      3.878   0.000       .4147001    1.262396
   size5 |   .8323246   .2202314      3.779   0.000       .4006789     1.26397
   size6 |   1.159786   .2153042      5.387   0.000       .7377977    1.581775
   size7 |   1.080264    .231109      4.674   0.000       .6272984    1.533229
   size8 |   1.214863   .2448026      4.963   0.000       .7350582    1.694667
     ost |   .2038238   .0868778      2.346   0.019       .0335465    .3741011
    expd |   .0602248    .104627      0.576   0.565      -.1448402    .2652899
---------+--------------------------------------------------------------------
   _cut1 |   .7625732   .2191719             (Ancillary parameters)
   _cut2 |   1.329247   .2210327
   _cut3 |   2.261343   .2243392
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   15.99
         Prob > chi2 =    0.0252


. test size2 size3 size4 size5 size6 size8

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size8 = 0.0

           chi2(  6) =   66.96
         Prob > chi2 =    0.0000


.
. * ADAMS
. replace hiaadams=hiaadams
(0 real changes made)

. replace hadams=hadams
(0 real changes made)

. oprobit info_5 innoint hadams br2-br8 size2-size8 ost expd

Iteration 0:   log likelihood = -1315.4941
Iteration 1:   log likelihood = -1176.3507
Iteration 2:   log likelihood = -1175.5987
Iteration 3:   log likelihood = -1175.5984

Ordered probit estimates                          Number of obs   =        983
                                                  LR chi2(18)     =     279.79
```

```
                                                Prob > chi2     =     0.0000
Log likelihood = -1175.5984                     Pseudo R2       =     0.1063

------------------------------------------------------------------------------
  info_5 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
 innoint |   .1248087   .0105385     11.843   0.000       .1041537    .1454638
  hadams |  -.0054955   .0331501     -0.166   0.868      -.0704684    .0594775
     br2 |  -.0575393   .1193088     -0.482   0.630      -.2913802    .1763016
     br3 |  -.2068407   .1207141     -1.713   0.087      -.4434361    .0297546
     br4 |   .1845135   .1414121      1.305   0.192      -.0926491    .4616761
     br5 |  -.3057985   .1415446     -2.160   0.031      -.5832207   -.0283762
     br6 |  -.3059523   .1735359     -1.763   0.078      -.6460765    .0341719
     br7 |  -.2773835   .2030738     -1.366   0.172      -.6754009     .120634
     br8 |   .0510239   .1193451      0.428   0.669      -.1828881    .2849359
   size2 |   .3142994   .2296997      1.368   0.171      -.1359037    .7645025
   size3 |    .514948   .2157926      2.386   0.017       .0920022    .9378938
   size4 |    .840617   .2164364      3.884   0.000       .4164094    1.264825
   size5 |   .8343023   .2204239      3.785   0.000       .4022794    1.266325
   size6 |   1.164071    .215495      5.402   0.000       .7417081    1.586433
   size7 |   1.103726   .2309822      4.778   0.000       .6510091    1.556443
   size8 |   1.224368   .2449542      4.998   0.000       .7442671     1.70447
     ost |   .2196101   .0865694      2.537   0.011       .0499371     .389283
    expd |   .0521165   .1044524      0.499   0.618      -.1526065    .2568395
---------+--------------------------------------------------------------------
   _cut1 |   .7653995   .2193561             (Ancillary parameters)
   _cut2 |    1.33045   .2212017
   _cut3 |   2.257491   .2244763
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   15.04
         Prob > chi2 =    0.0355


. test size2 size3 size4 size5 size6 size8

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size8 = 0.0

           chi2(  6) =   66.25
         Prob > chi2 =    0.0000


.
. * Inkmann
. replace hiainkma=hiainkma
(0 real changes made)

. replace hinkma=hinkma
```

```
(0 real changes made)

. oprobit info_5 innoint hinkma br2-br8 size2-size8 ost expd

Iteration 0:   log likelihood = -1323.0501
Iteration 1:   log likelihood = -1183.0381
Iteration 2:   log likelihood = -1182.2844
Iteration 3:   log likelihood = -1182.2841

Ordered probit estimates                          Number of obs   =        989
                                                  LR chi2(18)     =     281.53
                                                  Prob > chi2     =     0.0000
Log likelihood = -1182.2841                       Pseudo R2       =     0.1064

------------------------------------------------------------------------------
      info_5 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .1253637   .0105346    11.900   0.000       .1047162    .1460112
      hinkma |  -.0088554   .0339111    -0.261   0.794      -.0753201    .0576092
         br2 |  -.0623536   .1189882    -0.524   0.600      -.2955662     .170859
         br3 |  -.1728081   .1196368    -1.444   0.149      -.4072918    .0616757
         br4 |   .1891352   .1413666     1.338   0.181      -.0879382    .4662086
         br5 |  -.3342673   .1425734    -2.345   0.019       -.613706   -.0548286
         br6 |  -.2895473   .1711385    -1.692   0.091      -.6249727    .0458781
         br7 |  -.2715023    .203114    -1.337   0.181      -.6695983    .1265938
         br8 |   .0608054   .1192377     0.510   0.610      -.1728962     .294507
       size2 |   .2846779   .2300511     1.237   0.216      -.1662139    .7355697
       size3 |   .5257082   .2152304     2.443   0.015       .1038644    .9475521
       size4 |   .8241429   .2163566     3.809   0.000       .4000917    1.248194
       size5 |   .8351618   .2199929     3.796   0.000       .4039835     1.26634
       size6 |    1.16424    .215157     5.411   0.000       .7425401     1.58594
       size7 |   1.091925   .2298632     4.750   0.000       .6414014    1.542448
       size8 |   1.209982   .2441353     4.956   0.000       .7314856    1.688479
         ost |   .2003119   .0862272     2.323   0.020       .0313096    .3693141
        expd |   .0492107   .1037936     0.474   0.635      -.1542211    .2526425
-------------+----------------------------------------------------------------
       _cut1 |   .7643747   .2201361             (Ancillary parameters)
       _cut2 |   1.329456   .2219422
       _cut3 |   2.261117   .2252493
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   15.16
         Prob > chi2 =    0.0341


. test size2 size3 size4 size5 size6 size8

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size8 = 0.0
```

```
          chi2(  6) =   66.90
        Prob > chi2 =    0.0000


.
. * Geo
. replace hiageo=hiageo
(0 real changes made)

. replace hgeo=hgeo
(0 real changes made)

. oprobit info_5 innoint hgeo br2-br8 size2-size8 ost expd

Iteration 0:   log likelihood = -1298.3168
Iteration 1:   log likelihood = -1161.6676
Iteration 2:   log likelihood =  -1160.834
Iteration 3:   log likelihood = -1160.8334

Ordered probit estimates                          Number of obs   =        968
                                                  LR chi2(18)     =     274.97
                                                  Prob > chi2     =     0.0000
Log likelihood = -1160.8334                       Pseudo R2       =     0.1059

------------------------------------------------------------------------------
      info_5 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .1226652   .0106183     11.552   0.000       .1018538    .1434766
        hgeo |   .0075745    .030435      0.249   0.803      -.0520769     .067226
         br2 |   -.054331   .1207251     -0.450   0.653      -.2909479    .1822858
         br3 |  -.1917278   .1211991     -1.582   0.114      -.4292737    .0458181
         br4 |   .1757066   .1427591      1.231   0.218      -.1040961    .4555093
         br5 |  -.3137788   .1423661     -2.204   0.028      -.5928112   -.0347464
         br6 |  -.3140714   .1714761     -1.832   0.067      -.6501584    .0220156
         br7 |  -.2939117    .203063     -1.447   0.148      -.6919079    .1040845
         br8 |  -.0090751   .1205174     -0.075   0.940      -.2452848    .2271346
       size2 |   .4166585    .236974      1.758   0.079       -.047802     .881119
       size3 |   .6597018   .2227609      2.961   0.003       .2230985    1.096305
       size4 |   .9593691   .2234652      4.293   0.000       .5213853    1.397353
       size5 |   .9236829   .2277087      4.056   0.000       .4773821    1.369984
       size6 |   1.268886   .2221972      5.711   0.000       .8333872    1.704384
       size7 |   1.192273   .2365859      5.039   0.000       .7285736    1.655973
       size8 |   1.317302   .2500587      5.268   0.000       .8271963    1.807408
         ost |   .2353992   .0889915      2.645   0.008        .060979    .4098194
        expd |   .0609711   .1053636      0.579   0.563      -.1455378      .26748
-------------+----------------------------------------------------------------
       _cut1 |   .8663968    .234591             (Ancillary parameters)
       _cut2 |   1.436679    .236596
       _cut3 |   2.367761   .2397767
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   13.89
```

```
         Prob > chi2 =    0.0533


. test size2 size3 size4 size5 size6 size8

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size8 = 0.0

           chi2(  6) =   66.38
         Prob > chi2 =    0.0000


.
. * Inkmann/Pohlmeier
. replace hiainkpo=hiainkpo
(0 real changes made)

. replace hinkpo=hinkpo
(0 real changes made)

. oprobit info_5 innoint hinkpo br2-br8 size2-size8 ost expd

Iteration 0:   log likelihood = -1310.7636
Iteration 1:   log likelihood =  -1171.319
Iteration 2:   log likelihood = -1170.5121
Iteration 3:   log likelihood = -1170.5117

Ordered probit estimates                          Number of obs   =        980
                                                  LR chi2(18)     =     280.50
                                                  Prob > chi2     =     0.0000
Log likelihood = -1170.5117                       Pseudo R2       =     0.1070

------------------------------------------------------------------------------
      info_5 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .1249134   .0105927     11.792   0.000       .1041521    .1456747
      hinkpo |   -.012254   .0340486     -0.360   0.719      -.0789881      .05448
         br2 |  -.0433362   .1196276     -0.362   0.717      -.2778019    .1911296
         br3 |  -.1709215   .1198794     -1.426   0.154      -.4058808    .0640379
         br4 |   .2115417   .1426079      1.483   0.138      -.0679646     .491048
         br5 |  -.3282587   .1428779     -2.297   0.022      -.6082942   -.0482233
         br6 |  -.2954618   .1735017     -1.703   0.089      -.6355189    .0445953
         br7 |  -.2704602   .2031915     -1.331   0.183      -.6687082    .1277878
         br8 |   .0632562   .1194854      0.529   0.597      -.1709309    .2974432
       size2 |   .3493346   .2347862      1.488   0.137      -.1108378    .8095071
       size3 |   .5906753   .2204349      2.680   0.007       .1586307     1.02272
       size4 |   .9175699   .2215952      4.141   0.000       .4832512    1.351888
       size5 |   .8916233   .2253061      3.957   0.000       .4500315    1.333215
       size6 |   1.229085   .2205654      5.572   0.000       .7967851    1.661386
       size7 |   1.142823    .236093      4.841   0.000       .6800889    1.605557
       size8 |    1.27644    .249576      5.114   0.000       .7872799      1.7656
         ost |   .1904226   .0868605      2.192   0.028       .0201792    .3606661
        expd |   .0450296   .1043041      0.432   0.666      -.1594027    .2494619
-------------+----------------------------------------------------------------
       _cut1 |   .8028742   .2294629             (Ancillary parameters)
       _cut2 |   1.367237   .2312784
       _cut3 |    2.29559   .2344797
------------------------------------------------------------------------------
```

```
. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   15.65
         Prob > chi2 =    0.0286


. test size2 size3 size4 size5 size6 size8

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size8 = 0.0

           chi2(  6) =   68.56
         Prob > chi2 =    0.0000
```

```
/*********************************************/
/*                SERVICES                   */
/*********************************************/
. /*=========================*/
. /*** Vertical spillovers ***/
. /*=========================*/
. replace innoint=innoint*100
(1637 real changes made)

. /* >>>  Uncentered correlation * <<<*/
. replace viaunc=viaunc*10
(1433 real changes made)

. replace vunc  =vunc*10
(2034 real changes made)

. *Customers manufacturing
. gen hv=info_1!=.&innoint !=.&vunc !=.&br2!=.& size2!=.& ost!=.&ak1!=.&ake1!=.
> &ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_1 innoint vunc br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood =  -1614.808
Iteration 1:   log likelihood = -1555.3306
Iteration 2:   log likelihood = -1555.0692
Iteration 3:   log likelihood = -1555.0683
Iteration 4:   log likelihood = -1555.0683

Ordered probit estimates                          Number of obs   =       1242
                                                  LR chi2(19)     =     119.48
                                                  Prob > chi2     =     0.0000
Log likelihood = -1555.0683                       Pseudo R2       =     0.0370

------------------------------------------------------------------------------
      info_1 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .0051879    .041442      0.125   0.900      -.0760369    .0864127
        vunc |   .0987648   .0393836      2.508   0.012       .0215744    .1759552
         br2 |  -.3078509   .1297294     -2.373   0.018      -.5621159   -.0535859
         br3 |  -.1297847    .119878     -1.083   0.279      -.3647412    .1051718
         br4 |  -.9165232   .1263216     -7.255   0.000      -1.164109   -.6689374
         br5 |  -.1404895   .1457226     -0.964   0.335      -.4261005    .1451215
         br6 |  -.2164778   .1397886     -1.549   0.121      -.4904585    .0575029
         br7 |  -.5409598   .1521814     -3.555   0.000      -.8392299   -.2426898
         br8 |   -.164869   .1128973     -1.460   0.144      -.3861437    .0564057
       size2 |   .0166143   .1304371      0.127   0.899      -.2390377    .2722664
       size3 |  -.1993641   .1216617     -1.639   0.101      -.4378167    .0390884
       size4 |   .0448541   .1327341      0.338   0.735         -.2153    .3050082
       size5 |  -.1324008   .1391026     -0.952   0.341      -.4050369    .1402352
       size6 |    -.05163   .1405247     -0.367   0.713      -.3270533    .2237934
       size7 |  -.1923208   .1318373     -1.459   0.145      -.4507171    .0660756
         ost |  -.0467365   .0723479     -0.646   0.518      -.1885358    .0950628
         ak1 |   .1816997   .0885982      2.051   0.040       .0080505    .3553489
        ake1 |   .1640467   .0871971      1.881   0.060      -.0068564    .3349499
         ex1 |   -.000028   .0000588     -0.477   0.633      -.0001433    .0000872
-------------+----------------------------------------------------------------
        _cut1 |   4.534562    1.87527             (Ancillary parameters)
        _cut2 |   4.990093   1.875784
        _cut3 |    5.44715   1.875992
        _cut4 |    6.00274    1.87699
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8
```

```
 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   69.12
         Prob > chi2 =    0.0000


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    8.62
         Prob > chi2 =    0.1958


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =   23.67
         Prob > chi2 =    0.0000


. cap drop hv

.
. *  Customers manufacturing
. gen hv=info_2!=.&innoint !=.&vunc !=.&br2!=.& size2!=.& ost!=.&ak1!=.&ake1!=.
> &ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_2 innoint vunc br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -1982.5601
Iteration 1:   log likelihood = -1954.0643
Iteration 2:   log likelihood = -1953.6007
Iteration 3:   log likelihood = -1953.4427
Iteration 4:   log likelihood = -1953.4322
Iteration 5:   log likelihood = -1953.4322

Ordered probit estimates                          Number of obs   =       1256
                                                  LR chi2(19)     =      58.26
                                                  Prob > chi2     =     0.0000
Log likelihood = -1953.4322                       Pseudo R2       =     0.0147

------------------------------------------------------------------------------
      info_2 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .0136731   .0385591      0.355   0.723      -.0619013    .0892474
        vunc |   .0358188    .035687      1.004   0.316      -.0341264     .105764
         br2 |  -.1091152   .1231844     -0.886   0.376      -.3505522    .1323218
```

```
     br3 |   .0827113   .1149007      0.720   0.472      -.1424899    .3079125
     br4 |   .1072281   .1118891      0.958   0.338      -.1120705    .3265268
     br5 |   .3927746   .1393518      2.819   0.005       .1196501    .6658992
     br6 |  -.2658304   .1356086     -1.960   0.050      -.5316183   -.0000424
     br7 |   .0764332   .1379207      0.554   0.579      -.1938863    .3467528
     br8 |   .2300285   .1081994      2.126   0.034       .0179615    .4420954
   size2 |  -.1372036   .1206904     -1.137   0.256      -.3737525    .0993452
   size3 |  -.1677115   .1120776     -1.496   0.135      -.3873795    .0519565
   size4 |  -.1831183    .124149     -1.475   0.140      -.4264458    .0602092
   size5 |  -.1125182   .1273883     -0.883   0.377      -.3621946    .1371582
   size6 |  -.0293202   .1289603     -0.227   0.820      -.2820778    .2234373
   size7 |  -.1576216   .1210032     -1.303   0.193      -.3947834    .0795403
     ost |   .0618622   .0666165      0.929   0.353      -.0687038    .1924281
     ak1 |    .064652     .08278      0.781   0.435      -.0975938    .2268978
    ake1 |     .21888    .080458      2.720   0.007       .0611852    .3765749
     ex1 |   .0001708   .0001042      1.639   0.101      -.0000334     .000375
---------+--------------------------------------------------------------------
   _cut1 |   1.244937   1.699922             (Ancillary parameters)
   _cut2 |   1.685039   1.700236
   _cut3 |   2.202163    1.70035
   _cut4 |   2.936259   1.700652
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   28.54
         Prob > chi2 =    0.0002


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    4.25
         Prob > chi2 =    0.6430


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =   21.32
         Prob > chi2 =    0.0001


.
. cap drop hv
```

```
.
. *  Suppliers
. gen hv=info_3!=.&innoint !=.&vunc !=.&br2!=.& size2!=.& ost!=.&ak1!=.&ake1!=.
> &ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_3 innoint vunc br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -1876.4265
Iteration 1:   log likelihood = -1791.0005
Iteration 2:   log likelihood = -1790.7658
Iteration 3:   log likelihood = -1790.7546
Iteration 4:   log likelihood = -1790.7543

Ordered probit estimates                          Number of obs   =       1248
                                                  LR chi2(19)     =     171.34
                                                  Prob > chi2     =     0.0000
Log likelihood = -1790.7543                       Pseudo R2       =     0.0457

------------------------------------------------------------------------------
      info_3 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .0976087   .0396243      2.463   0.014       .0199466    .1752708
        vunc |   .0598697   .0369403      1.621   0.105      -.0125318    .1322713
         br2 |  -.0331697   .1201544     -0.276   0.783      -.2686679    .2023286
         br3 |  -.5967663   .1149091     -5.193   0.000      -.8219841   -.3715485
         br4 |   -1.20794   .1180117    -10.236   0.000      -1.439239   -.9766417
         br5 |  -.5239402   .1381246     -3.793   0.000      -.7946595   -.2532208
         br6 |  -.9361378   .1382477     -6.771   0.000      -1.207098   -.6651772
         br7 |  -.6120847   .1409334     -4.343   0.000      -.8883091   -.3358602
         br8 |  -.4008388   .1066183     -3.760   0.000      -.6098068   -.1918709
       size2 |  -.1206446    .123179     -0.979   0.327       -.362071    .1207819
       size3 |  -.1919861    .114878     -1.671   0.095      -.4171428    .0331707
       size4 |  -.2664738   .1274639     -2.091   0.037      -.5162983   -.0166492
       size5 |  -.2354965   .1308187     -1.800   0.072      -.4918965    .0209035
       size6 |  -.1312877    .132422     -0.991   0.321        -.39083    .1282547
       size7 |  -.1065911   .1232577     -0.865   0.387      -.3481717    .1349895
         ost |   .0159551   .0685457      0.233   0.816      -.1183921    .1503023
         ak1 |   .0551508   .0843711      0.654   0.513      -.1102135     .220515
        ake1 |   .0587917   .0821282      0.716   0.474      -.1021766    .2197601
         ex1 |  -.0000606   .0000784     -0.774   0.439      -.0002142     .000093
-------------+----------------------------------------------------------------
       _cut1 |    1.94187   1.758669             (Ancillary parameters)
       _cut2 |   2.417478   1.758869
       _cut3 |   3.009913   1.759152
       _cut4 |   3.743851   1.760219
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =  151.71
         Prob > chi2 =    0.0000


. test size2 size3 size4 size5 size6 size7
```

```
 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    6.18
         Prob > chi2 =    0.4030


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =    3.42
         Prob > chi2 =    0.3307



.
. cap drop hv

.
. /* >>>  ADAMS * <<<*/
. replace viaadams=viaadams
(0 real changes made)

. replace vadams=vadams
(0 real changes made)

. *  Customers manufacturing
. gen hv=info_1!=.&innoint !=.&vadams !=.&br2!=.& size2!=.& ost!=.&ak1!=.&ake1!
> =.&ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_1 innoint vadams br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -1744.2958
Iteration 1:   log likelihood =  -1677.694
Iteration 2:   log likelihood = -1677.3806
Iteration 3:   log likelihood = -1677.3806

Ordered probit estimates                          Number of obs   =       1337
                                                  LR chi2(19)     =     133.83
                                                  Prob > chi2     =     0.0000
Log likelihood = -1677.3806                       Pseudo R2       =     0.0384

------------------------------------------------------------------------------
      info_1 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .0363229   .0400079      0.908   0.364      -.0420912     .114737
      vadams |   .2566556   .1200028      2.139   0.032       .0214545    .4918566
         br2 |  -.3043716   .1257955     -2.420   0.016      -.5509263   -.0578169
         br3 |  -.0880474     .11469     -0.768   0.443      -.3128357    .1367409
         br4 |  -.9561771   .1222752     -7.820   0.000      -1.195832   -.7165221
         br5 |  -.0999346   .1397966     -0.715   0.475       -.373931    .1740618
         br6 |  -.1937116   .1338715     -1.447   0.148       -.456095    .0686717
         br7 |  -.5440469   .1440195     -3.778   0.000      -.8263198    -.261774
         br8 |  -.1416075   .1089228     -1.300   0.194      -.3550922    .0718772
       size2 |   .0128211   .1246288      0.103   0.918      -.2314469     .257089
       size3 |  -.1897049   .1172287     -1.618   0.106      -.4194688    .0400591
       size4 |   .0036338   .1288976      0.028   0.978      -.2490007    .2562684
```

```
   size5 |  -.1416076   .1333238     -1.062   0.288      -.4029175    .1197023
   size6 |  -.0349959   .1353284     -0.259   0.796      -.3002346    .2302428
   size7 |  -.1839921    .127609     -1.442   0.149      -.4341012     .066117
     ost |  -.0202815   .0697563     -0.291   0.771      -.1570013    .1164384
     ak1 |   .1938617   .0853366      2.272   0.023       .0266051    .3611183
    ake1 |   .1583681    .084597      1.872   0.061      -.0074389    .3241752
     ex1 |     .00003   .0000288      1.042   0.298      -.0000264    .0000864
---------+--------------------------------------------------------------------
   _cut1 |   1.087279   .5721028             (Ancillary parameters)
   _cut2 |   1.528266   .5726461
   _cut3 |   1.989536   .5730948
   _cut4 |   2.521249   .5740923
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   83.96
         Prob > chi2 =    0.0000


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    7.48
         Prob > chi2 =    0.2786


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =   27.12
         Prob > chi2 =    0.0000



.
. cap drop hv

.
. *  Customers manufacturing
. gen hv=info_2!=.&innoint !=.&vadams !=.&br2!=.& size2!=.& ost!=.&ak1!=.&ake1!
> =.&ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_2 innoint vadams br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -2124.1476
Iteration 1:   log likelihood = -2096.3831
```

```
Iteration 2:   log likelihood = -2096.2784
Iteration 3:   log likelihood = -2096.2777

Ordered probit estimates                          Number of obs   =       1348
                                                  LR chi2(19)     =      55.74
                                                  Prob > chi2     =     0.0000
Log likelihood = -2096.2777                       Pseudo R2       =     0.0131

------------------------------------------------------------------------------
      info_2 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .0094077   .0373006      0.252   0.801      -.0637002    .0825156
      vadams |   .0277472   .1055992      0.263   0.793      -.1792233    .2347178
         br2 |  -.1184015   .1197685     -0.989   0.323      -.3531434    .1163404
         br3 |   .0963445   .1101893      0.874   0.382      -.1196226    .3123115
         br4 |   .1358707   .1071657      1.268   0.205      -.0741702    .3459115
         br5 |   .3951333   .1338969      2.951   0.003       .1327001    .6575665
         br6 |  -.2020627   .1305128     -1.548   0.122       -.457863    .0537376
         br7 |   .1772358   .1306974      1.356   0.175      -.0789265     .433398
         br8 |   .2319823   .1043684      2.223   0.026        .027424    .4365405
       size2 |  -.1036661   .1153563     -0.899   0.369      -.3297604    .1224281
       size3 |  -.1805538   .1079523     -1.673   0.094      -.3921364    .0310288
       size4 |  -.1503401   .1200117     -1.253   0.210      -.3855588    .0848785
       size5 |  -.0853945   .1221906     -0.699   0.485      -.3248836    .1540947
       size6 |  -.0326709    .124252     -0.263   0.793      -.2762004    .2108585
       size7 |  -.1079213   .1169546     -0.923   0.356      -.3371481    .1213055
         ost |   .0698051   .0643627      1.085   0.278      -.0563435    .1959536
         ak1 |   .1462234   .0798151      1.832   0.067      -.0102112    .3026581
        ake1 |   .1458474   .0779516      1.871   0.061      -.0069349    .2986297
         ex1 |   .0000785   .0000361      2.176   0.030       7.80e-06    .0001493
-------------+----------------------------------------------------------------
        _cut1 |   -.291324   .5061473            (Ancillary parameters)
        _cut2 |   .1401959   .5061937
        _cut3 |   .6682751   .5059146
        _cut4 |   1.415109   .5065051
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   28.56
         Prob > chi2 =    0.0002


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    3.95
         Prob > chi2 =    0.6840
```

```
. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =   24.02
         Prob > chi2 =    0.0000


.
. cap drop hv

.
. *  Suppliers
. gen hv=info_3!=.&innoint !=.&vadams !=.&br2!=.& size2!=.& ost!=.&ak1!=.&ake1!
> =.&ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_3 innoint vadams br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -2020.6922
Iteration 1:   log likelihood = -1934.5231
Iteration 2:   log likelihood =  -1934.186
Iteration 3:   log likelihood = -1934.1593
Iteration 4:   log likelihood = -1934.1581
Iteration 5:   log likelihood = -1934.1581

Ordered probit estimates                          Number of obs   =       1341
                                                  LR chi2(19)     =     173.07
                                                  Prob > chi2     =     0.0000
Log likelihood = -1934.1581                       Pseudo R2       =     0.0428

------------------------------------------------------------------------------
     info_3 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
------------+-----------------------------------------------------------------
    innoint |   .0755837   .0384231     1.967   0.049       .0002757    .1508916
     vadams |   .1187392   .1093063     1.086   0.277      -.0954972    .3329757
        br2 |  -.0496477   .1166136    -0.426   0.670      -.2782061    .1789107
        br3 |   -.537296   .1101917    -4.876   0.000      -.7532676   -.3213243
        br4 |  -1.203435    .113072   -10.643   0.000      -1.425052   -.9818184
        br5 |  -.5002373   .1332336    -3.755   0.000      -.7613705   -.2391042
        br6 |   -.879501   .1319361    -6.666   0.000      -1.138091   -.6209109
        br7 |  -.5717711   .1329326    -4.301   0.000      -.8323142    -.311228
        br8 |  -.3817138   .1028235    -3.712   0.000      -.5832443   -.1801834
      size2 |  -.1150476   .1179053    -0.976   0.329      -.3461377    .1160424
      size3 |  -.1904585   .1109669    -1.716   0.086      -.4079496    .0270327
      size4 |  -.2227981   .1233278    -1.807   0.071      -.4645161    .0189199
      size5 |  -.1864393   .1250984    -1.490   0.136      -.4316276     .058749
      size6 |  -.1127252   .1276879    -0.883   0.377      -.3629889    .1375385
      size7 |  -.1134761   .1194495    -0.950   0.342      -.3475927    .1206406
        ost |  -.0149856   .0662415    -0.226   0.821      -.1448166    .1148454
        ak1 |   .0528408   .0812206     0.651   0.515      -.1063486    .2120302
       ake1 |   .0698933   .0795123     0.879   0.379      -.0859478    .2257345
        ex1 |  -.0000686   .0000763    -0.899   0.369      -.0002182     .000081
------------+-----------------------------------------------------------------
      _cut1 |  -.3376947   .5220083            (Ancillary parameters)
      _cut2 |   .1319188   .5218475
      _cut3 |   .7120746     .52189
      _cut4 |   1.434112   .5230882
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8
```

```
 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =  155.19
         Prob > chi2 =    0.0000


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    4.61
         Prob > chi2 =    0.5941


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =    4.36
         Prob > chi2 =    0.2249


.
. cap drop hv

.
. /* >>>  INKMANN * <<<*/
. replace viainkma=viainkma
(0 real changes made)

. replace vinkma=vinkma/10
(2316 real changes made)

. *  Customers manufacturing
. gen hv=info_1!=.&innoint !=.&vinkma !=.&br2!=.& size2!=.& ost!=.&ak1!=.&ake1!
> =.&ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_1 innoint vinkma br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -1843.9224
Iteration 1:   log likelihood = -1779.0771
Iteration 2:   log likelihood = -1778.8231
Iteration 3:   log likelihood = -1778.8231

Ordered probit estimates                          Number of obs   =       1409
                                                  LR chi2(19)     =     130.20
                                                  Prob > chi2     =     0.0000
Log likelihood = -1778.8231                       Pseudo R2       =     0.0353
```

```
------------------------------------------------------------------------------
  info_1 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
 innoint |   .0351319   .0386801      0.908   0.364      -.0406796    .1109434
  vinkma |   .0475963   .9528269      0.050   0.960       -1.81991    1.915103
     br2 |   -.337877   .1229607     -2.748   0.006      -.5788757   -.0968784
     br3 |  -.0891706   .1120436     -0.796   0.426      -.3087721    .1304308
     br4 |  -.9259194   .1189189     -7.786   0.000      -1.158996   -.6928426
     br5 |  -.1294499   .1346928     -0.961   0.337      -.3934429    .1345431
     br6 |  -.1458956   .1286935     -1.134   0.257      -.3981303    .1063391
     br7 |   -.551768   .1428294     -3.863   0.000      -.8317084   -.2718275
     br8 |  -.1396455   .1072255     -1.302   0.193      -.3498037    .0705127
   size2 |  -.0526276   .1218133     -0.432   0.666      -.2913773    .1861222
   size3 |  -.1495167   .1150454     -1.300   0.194      -.3750015    .0759682
   size4 |   .0326853   .1265482      0.258   0.796      -.2153447    .2807152
   size5 |  -.1548044   .1289005     -1.201   0.230      -.4074448     .097836
   size6 |  -.0600124   .1327902     -0.452   0.651      -.3202763    .2002515
   size7 |  -.2175139   .1250669     -1.739   0.082      -.4626406    .0276129
     ost |   .0136391   .0673831      0.202   0.840      -.1184293    .1457076
     ak1 |   .2191248   .0801087      2.735   0.006       .0621146     .376135
    ake1 |   .1217985   .0759631      1.603   0.109      -.0270864    .2706834
     ex1 |   .0000262    .000029      0.900   0.368      -.0000308    .0000831
---------+--------------------------------------------------------------------
   _cut1 |  -.0818825    .407891             (Ancillary parameters)
   _cut2 |   .3659361   .4078259
   _cut3 |   .8209765   .4081328
   _cut4 |   1.343849   .4094941
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   85.06
         Prob > chi2 =    0.0000


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    7.18
         Prob > chi2 =    0.3047


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =   26.89
```

```
         Prob > chi2 =    0.0000


.
. cap drop hv

.
. *  Customers manufacturing
. gen hv=info_2!=.&innoint !=.&vinkma !=.&br2!=.& size2!=.& ost!=.&ak1!=.&ake1!
> =.&ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_2 innoint vinkma br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -2242.7295
Iteration 1:   log likelihood = -2214.3619
Iteration 2:   log likelihood = -2214.2655
Iteration 3:   log likelihood = -2214.2649

Ordered probit estimates                          Number of obs   =       1423
                                                  LR chi2(19)     =      56.93
                                                  Prob > chi2     =     0.0000
Log likelihood = -2214.2649                       Pseudo R2       =     0.0127

------------------------------------------------------------------------------
  info_2 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
 innoint |   .0143265    .036054      0.397   0.691       -.056338     .084991
  vinkma |   -1.03845   .8726294     -1.190   0.234      -2.748772    .6718721
     br2 |  -.1315284   .1168069     -1.126   0.260      -.3604656    .0974089
     br3 |   .1289386   .1073586      1.201   0.230      -.0814804    .3393576
     br4 |    .133776    .104809      1.276   0.202      -.0716458    .3391978
     br5 |   .3884326   .1289384      3.013   0.003       .1357179    .6411473
     br6 |   -.156088   .1252153     -1.247   0.213      -.4015054    .0893294
     br7 |   .1624232   .1291697      1.257   0.209      -.0907448    .4155912
     br8 |   .2274434    .102574      2.217   0.027       .0264021    .4284848
   size2 |  -.1515661    .112518     -1.347   0.178      -.3720973    .0689652
   size3 |  -.1873207   .1059987     -1.767   0.077      -.3950744    .0204329
   size4 |  -.1504001   .1177712     -1.277   0.202      -.3812274    .0804272
   size5 |  -.1386755   .1183893     -1.171   0.241      -.3707142    .0933633
   size6 |  -.0902366   .1218282     -0.741   0.459      -.3290156    .1485424
   size7 |  -.1263547   .1142579     -1.106   0.269      -.3502961    .0975867
     ost |   .0728465   .0623292      1.169   0.243      -.0493164    .1950095
     ak1 |   .1116309   .0748278      1.492   0.136      -.0350288    .2582907
    ake1 |   .1715679   .0694519      2.470   0.013       .0354446    .3076912
     ex1 |   .0000782   .0000357      2.193   0.028       8.30e-06    .0001481
---------+--------------------------------------------------------------------
   _cut1 |  -.8553723   .3756506             (Ancillary parameters)
   _cut2 |  -.4186983   .3752668
   _cut3 |   .1105521   .3752933
   _cut4 |   .8521268   .3760285
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   28.25
```

```
         Prob > chi2 =    0.0002


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    3.58
         Prob > chi2 =    0.7338


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =   24.89
         Prob > chi2 =    0.0000


.
. cap drop hv

.
. *  Suppliers
. gen hv=info_3!=.&innoint !=.&vinkma !=.&br2!=.& size2!=.& ost!=.&ak1!=.&ake1!
> =.&ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_3 innoint vinkma br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -2132.7178
Iteration 1:   log likelihood = -2048.0661
Iteration 2:   log likelihood = -2047.7796
Iteration 3:   log likelihood = -2047.7613
Iteration 4:   log likelihood = -2047.7608

Ordered probit estimates                          Number of obs   =       1413
                                                  LR chi2(19)     =     169.91
                                                  Prob > chi2     =     0.0000
Log likelihood = -2047.7608                       Pseudo R2       =     0.0398

------------------------------------------------------------------------------
  info_3 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
 innoint |   .0700535   .0370829      1.889   0.059      -.0026277    .1427348
  vinkma |   1.466569    .900381      1.629   0.103      -.2981455    3.231283
     br2 |   -.062261   .1140333     -0.546   0.585      -.2857622    .1612401
     br3 |  -.5578017   .1075808     -5.185   0.000      -.7686562   -.3469473
     br4 |  -1.160753   .1100979    -10.543   0.000      -1.376541   -.9449647
     br5 |  -.5106041    .128481     -3.974   0.000      -.7624223    -.258786
     br6 |  -.8205916   .1265467     -6.484   0.000      -1.068619   -.5725646
     br7 |  -.6014576   .1316662     -4.568   0.000      -.8595186   -.3433967
     br8 |  -.3720553   .1011581     -3.678   0.000      -.5703216    -.173789
   size2 |   -.129625   .1151374     -1.126   0.260      -.3552901      .09604
   size3 |  -.1998932   .1092795     -1.829   0.067       -.414077    .0142907
   size4 |  -.2074556   .1210931     -1.713   0.087      -.4447938    .0298826
   size5 |   -.171241    .121235     -1.412   0.158      -.4088572    .0663752
```

```
   size6 |   -.113028   .1252153     -0.903   0.367      -.3584456    .1323895
   size7 |  -.1118694   .1168049     -0.958   0.338      -.3408028     .117064
     ost |  -.0092523    .064053     -0.144   0.885       -.134794    .1162893
     ak1 |   .0342607   .0758766      0.452   0.652      -.1144547    .1829761
    ake1 |   .0673513   .0706637      0.953   0.341      -.0711469    .2058496
     ex1 |  -.0000659   .0000673     -0.979   0.328      -.0001977     .000066
---------+--------------------------------------------------------------------
   _cut1 |  -.2980054   .3861178             (Ancillary parameters)
   _cut2 |   .1642541   .3863742
   _cut3 |   .7561673   .3867179
   _cut4 |   1.479286   .3872834
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =  152.11
         Prob > chi2 =    0.0000


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    4.49
         Prob > chi2 =    0.6100


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =    3.70
         Prob > chi2 =    0.2960



.
. cap drop hv

.
. /* >>>  GEO * <<<*/
. replace viageo=viageo
(0 real changes made)

. replace vgeo=vgeo
(0 real changes made)

. *  Customers manufacturing
. gen hv=info_1!=.&innoint !=.&vgeo !=.&br2!=.& size2!=.& ost!=.&ak1!=.&ake1!=.
```

```
> &ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_1 innoint vgeo br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -1842.8114
Iteration 1:   log likelihood = -1780.2597
Iteration 2:   log likelihood = -1780.0086
Iteration 3:   log likelihood = -1780.0086

Ordered probit estimates                          Number of obs   =       1404
                                                  LR chi2(19)     =     125.61
                                                  Prob > chi2     =     0.0000
Log likelihood = -1780.0086                       Pseudo R2       =     0.0341

------------------------------------------------------------------------------
      info_1 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |    .034473   .0388667      0.887   0.375      -.0417043    .1106503
        vgeo |  -.0048293   .0170177     -0.284   0.777      -.0381833    .0285248
         br2 |  -.3273643    .122935     -2.663   0.008      -.5683125   -.0864161
         br3 |  -.0834414   .1120361     -0.745   0.456      -.3030281    .1361454
         br4 |  -.9241895   .1207439     -7.654   0.000      -1.160843   -.6875357
         br5 |  -.1237999    .135048     -0.917   0.359      -.3884892    .1408893
         br6 |  -.1350759   .1285939     -1.050   0.294      -.3871153    .1169634
         br7 |  -.5125933     .14375     -3.566   0.000      -.7943382   -.2308485
         br8 |  -.1371275   .1064456     -1.288   0.198      -.3457571     .071502
       size2 |  -.0502923   .1223544     -0.411   0.681      -.2901026     .189518
       size3 |  -.1541877   .1153666     -1.337   0.181      -.3803021    .0719268
       size4 |   .0305488   .1270595      0.240   0.810      -.2184832    .2795808
       size5 |  -.1256758   .1297991     -0.968   0.333      -.3800773    .1287257
       size6 |  -.0365093   .1336397     -0.273   0.785      -.2984383    .2254198
       size7 |  -.2008727   .1261859     -1.592   0.111      -.4481925    .0464471
         ost |  -.0079386   .0675386     -0.118   0.906      -.1403118    .1244346
         ak1 |   .2109365   .0800413      2.635   0.008       .0540584    .3678146
        ake1 |   .1255126   .0757492      1.657   0.098      -.0229532    .2739783
         ex1 |   .0000261    .000029      0.901   0.368      -.0000307     .000083
-------------+----------------------------------------------------------------
       _cut1 |  -.1026686   .1329183            (Ancillary parameters)
       _cut2 |   .3449821   .1333292
       _cut3 |   .7990464   .1345912
       _cut4 |   1.319048   .1376182
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   80.91
         Prob > chi2 =    0.0000


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
```

```
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    6.55
         Prob > chi2 =    0.3645


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =   26.16
         Prob > chi2 =    0.0000


.
. cap drop hv

.
. *  Customers manufacturing
. gen hv=info_2!=.&innoint !=.&viageo !=.&vgeo !=.&br2!=.& size2!=.& ost!=.&ak1
> !=.&ake1!=.&ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_2 innoint vgeo br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -2234.2043
Iteration 1:   log likelihood = -2206.6761
Iteration 2:   log likelihood = -2206.5779
Iteration 3:   log likelihood = -2206.5773
Iteration 4:   log likelihood = -2206.5773

Ordered probit estimates                          Number of obs   =       1418
                                                  LR chi2(19)     =      55.25
                                                  Prob > chi2     =     0.0000
Log likelihood = -2206.5773                       Pseudo R2       =     0.0124

------------------------------------------------------------------------------
      info_2 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .0065458   .0362456      0.181   0.857      -.0644942    .0775858
        vgeo |  -.0002123   .0157179     -0.014   0.989      -.0310188    .0305942
         br2 |  -.1336919   .1168837     -1.144   0.253      -.3627798     .095396
         br3 |    .122754   .1074034      1.143   0.253      -.0877529    .3332609
         br4 |   .1317344   .1063199      1.239   0.215      -.0766488    .3401176
         br5 |    .385069   .1291653      2.981   0.003       .1319096    .6382283
         br6 |  -.1622489    .125088     -1.297   0.195       -.407417    .0829191
         br7 |    .150242   .1305187      1.151   0.250        -.10557     .406054
         br8 |   .2240398   .1019344      2.198   0.028       .0242522    .4238275
       size2 |  -.1431035   .1130347     -1.266   0.206      -.3646475    .0784404
       size3 |  -.1864606   .1062938     -1.754   0.079      -.3947926    .0218714
       size4 |  -.1666369   .1182571     -1.409   0.159      -.3984164    .0651427
       size5 |  -.1133485    .119383     -0.949   0.342      -.3473349    .1206379
       size6 |  -.0817123   .1228184     -0.665   0.506       -.322432    .1590073
       size7 |   -.134046   .1154189     -1.161   0.245      -.3602629    .0921708
         ost |    .073503   .0624761      1.176   0.239       -.048948    .1959539
         ak1 |   .1107179   .0748408      1.479   0.139      -.0359673    .2574031
        ake1 |   .1680221   .0693164      2.424   0.015       .0321644    .3038798
         ex1 |   .0000779   .0000358      2.179   0.029       7.84e-06     .000148
-------------+----------------------------------------------------------------
       _cut1 |  -.4380971   .1259529            (Ancillary parameters)
       _cut2 |  -.0061641   .1255438
```

```
   _cut3 |   .5266272   .1259603
   _cut4 |   1.263194   .1287629
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   27.96
         Prob > chi2 =    0.0002


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    3.75
         Prob > chi2 =    0.7107


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =   24.12
         Prob > chi2 =    0.0000


.
. cap drop hv

.
. *  Suppliers
. gen hv=info_3!=.&innoint !=.&vgeo !=.&br2!=.& size2!=.& ost!=.&ak1!=.&ake1!=.
> &ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_3 innoint vgeo br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -2118.8641
Iteration 1:   log likelihood = -2038.0584
Iteration 2:   log likelihood = -2037.7749
Iteration 3:   log likelihood = -2037.7559
Iteration 4:   log likelihood = -2037.7553

Ordered probit estimates                          Number of obs   =       1407
                                                  LR chi2(19)     =     162.22
                                                  Prob > chi2     =     0.0000
Log likelihood = -2037.7553                       Pseudo R2       =     0.0383

------------------------------------------------------------------------------
```

```
  info_3 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
---------+-----------------------------------------------------------------
 innoint |   .0664715   .0373243      1.781   0.075      -.0066827    .1396257
    vgeo |  -.0131925   .0162374     -0.812   0.417      -.0450173    .0186322
     br2 |  -.0689317   .1141035     -0.604   0.546      -.2925704     .154707
     br3 |  -.5621962   .1076221     -5.224   0.000      -.7731316   -.3512608
     br4 |   -1.14291   .1118626    -10.217   0.000      -1.362157   -.9236636
     br5 |  -.4953829    .128725     -3.848   0.000      -.7476793   -.2430865
     br6 |  -.8122366   .1264082     -6.426   0.000      -1.059992   -.5644812
     br7 |  -.6197621   .1332328     -4.652   0.000      -.8808936   -.3586305
     br8 |  -.3744327   .1005788     -3.723   0.000      -.5715636   -.1773019
   size2 |  -.1201349   .1157257     -1.038   0.299      -.3469531    .1066833
   size3 |  -.1887992   .1096026     -1.723   0.085      -.4036163     .026018
   size4 |  -.2216512   .1216981     -1.821   0.069      -.4601751    .0168727
   size5 |  -.1602992   .1223008     -1.311   0.190      -.4000044    .0794059
   size6 |  -.0949107   .1263877     -0.751   0.453       -.342626    .1528045
   size7 |  -.0976944   .1181386     -0.827   0.408      -.3292417    .1338529
     ost |  -.0103551   .0641816     -0.161   0.872      -.1361487    .1154386
     ak1 |   .0329528   .0759595      0.434   0.664      -.1159251    .1818307
    ake1 |   .0672709   .0705907      0.953   0.341      -.0710843    .2056261
     ex1 |  -.0000651   .0000682     -0.955   0.340      -.0001987    .0000685
---------+-----------------------------------------------------------------
   _cut1 |  -.8982428   .1273859             (Ancillary parameters)
   _cut2 |  -.4421374   .1262559
   _cut3 |   .1490323   .1258823
   _cut4 |   .8839418   .1287614
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =  143.40
         Prob > chi2 =    0.0000


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    4.77
         Prob > chi2 =    0.5741


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =    3.58
         Prob > chi2 =    0.3109
```

```
.
. cap drop hv

.
. /* >>>  Inkmann/Pohlmeier  <<<*/
. replace viainkpo=viainkpo
(0 real changes made)

. replace vinkpo=vinkpo
(0 real changes made)

. *  Customers manufacturing
. gen hv=info_1!=.&innoint !=.&vinkpo !=.&br2!=.& size2!=.& ost!=.&ak1!=.&ake1!
> =.&ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_1 innoint vinkpo br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood =  -1611.529
Iteration 1:   log likelihood = -1551.4206
Iteration 2:   log likelihood = -1551.1442
Iteration 3:   log likelihood = -1551.1434

Ordered probit estimates                          Number of obs   =       1241
                                                  LR chi2(19)     =     120.77
                                                  Prob > chi2     =     0.0000
Log likelihood = -1551.1434                       Pseudo R2       =     0.0375

------------------------------------------------------------------------------
      info_1 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .0075118   .0413214      0.182   0.856      -.0734766    .0885002
      vinkpo |  -.3087991   .1303192     -2.370   0.018      -.5642199   -.0533782
         br2 |  -.3356405   .1294892     -2.592   0.010      -.5894346   -.0818464
         br3 |  -.1280975   .1203364     -1.064   0.287      -.3639524    .1077575
         br4 |  -.9418927   .1272362     -7.403   0.000      -1.191271   -.6925143
         br5 |  -.1244554   .1459637     -0.853   0.394       -.410539    .1616283
         br6 |  -.2604655   .1402059     -1.858   0.063       -.535264     .014333
         br7 |  -.5368412    .152483     -3.521   0.000      -.8357024     -.23798
         br8 |   -.154528   .1130529     -1.367   0.172      -.3761077    .0670517
       size2 |   -.000801   .1311639     -0.006   0.995      -.2578775    .2562755
       size3 |  -.1943153   .1220404     -1.592   0.111      -.4335101    .0448794
       size4 |   .0597127   .1332868      0.448   0.654      -.2015247    .3209501
       size5 |  -.1305761   .1385652     -0.942   0.346      -.4021588    .1410066
       size6 |  -.0387896   .1407826     -0.276   0.783      -.3147183    .2371391
       size7 |  -.2088489   .1327359     -1.573   0.116      -.4690065    .0513087
         ost |  -.0455013    .072413     -0.628   0.530      -.1874282    .0964256
         ak1 |   .1983236   .0882783      2.247   0.025       .0253013    .3713459
        ake1 |   .1612324   .0870366      1.852   0.064      -.0093561     .331821
         ex1 |  -.0000264   .0000577     -0.457   0.647      -.0001395    .0000867
-------------+----------------------------------------------------------------
       _cut1 |  -2.267747   .9084303             (Ancillary parameters)
       _cut2 |  -1.811364   .9081198
       _cut3 |  -1.362545    .908161
       _cut4 |  -.8026081   .9078889
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
```

```
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   72.86
         Prob > chi2 =    0.0000


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    9.16
         Prob > chi2 =    0.1650


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =   25.41
         Prob > chi2 =    0.0000


.
. cap drop hv

.
. *  Customers manufacturing
. gen hv=info_2!=.&innoint !=.&vinkpo !=.&br2!=.& size2!=.& ost!=.&ak1!=.&ake1!
> =.&ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_2 innoint vinkpo br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -1983.8358
Iteration 1:   log likelihood = -1955.8962
Iteration 2:   log likelihood = -1955.4321
Iteration 3:   log likelihood = -1955.2749
Iteration 4:   log likelihood = -1955.2646
Iteration 5:   log likelihood = -1955.2646

Ordered probit estimates                          Number of obs   =       1256
                                                  LR chi2(19)     =      57.14
                                                  Prob > chi2     =     0.0000
Log likelihood = -1955.2646                       Pseudo R2       =     0.0144

------------------------------------------------------------------------------
     info_2 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
------------+-----------------------------------------------------------------
    innoint |   .0144176   .0384411      0.375   0.708      -.0609255    .0897607
     vinkpo |  -.0550996    .118229     -0.466   0.641      -.2868243    .1766251
        br2 |   -.132676   .1230365     -1.078   0.281      -.3738232    .1084711
        br3 |    .060917   .1153286      0.528   0.597       -.165123     .286957
        br4 |   .0947255   .1122078      0.844   0.399      -.1251978    .3146488
        br5 |   .3791739   .1394087      2.720   0.007       .1059379    .6524099
```

```
     br6 |  -.2882927   .1356339     -2.126   0.034      -.5541303   -.0224552
     br7 |   .0620038   .1381413      0.449   0.654      -.2087481    .3327557
     br8 |   .2092094   .1082064      1.933   0.053      -.0028713    .4212901
   size2 |  -.1443513   .1209825     -1.193   0.233      -.3814726    .0927701
   size3 |    -.17113   .1123251     -1.524   0.128      -.3912831    .0490231
   size4 |  -.1893506    .124557     -1.520   0.128      -.4334778    .0547766
   size5 |  -.1344861   .1268712     -1.060   0.289      -.3831491    .1141769
   size6 |  -.0188818   .1290221     -0.146   0.884      -.2717604    .2339968
   size7 |  -.1466827   .1215377     -1.207   0.227      -.3848922    .0915268
     ost |   .0673854   .0667143      1.010   0.312      -.0633722    .1981431
     ak1 |   .0704562   .0822705      0.856   0.392       -.090791    .2317035
    ake1 |   .2158628   .0800993      2.695   0.007        .058871    .3728546
     ex1 |   .0001696   .0001038      1.634   0.102      -.0000338     .000373
---------+--------------------------------------------------------------------
   _cut1 |  -.8488875   .8255096             (Ancillary parameters)
   _cut2 |  -.4065069    .825282
   _cut3 |   .1100022   .8255909
   _cut4 |   .8425021   .8260888
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   29.08
         Prob > chi2 =    0.0001


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    4.62
         Prob > chi2 =    0.5938


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =   21.36
         Prob > chi2 =    0.0001



.
. cap drop hv

.
. *  Suppliers
. gen hv=info_3!=.&innoint !=.&vinkpo !=.&br2!=.& size2!=.& ost!=.&ak1!=.&ake1!
```

```
> =.&ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_3 innoint vinkpo br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -1877.5631
Iteration 1:   log likelihood = -1795.6772
Iteration 2:   log likelihood = -1795.4504
Iteration 3:   log likelihood = -1795.4396
Iteration 4:   log likelihood = -1795.4393

Ordered probit estimates                          Number of obs   =       1247
                                                  LR chi2(19)     =     164.25
                                                  Prob > chi2     =     0.0000
Log likelihood = -1795.4393                       Pseudo R2       =     0.0437

------------------------------------------------------------------------------
  info_3 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
 innoint |   .0983319   .0394698      2.491   0.013       .0209726    .1756912
  vinkpo |  -.1845727   .1215352     -1.519   0.129      -.4227773    .0536318
     br2 |  -.0470977   .1199486     -0.393   0.695      -.2821927    .1879974
     br3 |  -.5781575   .1152983     -5.014   0.000       -.804138   -.3521771
     br4 |  -1.205169   .1184482    -10.175   0.000      -1.437324   -.9730152
     br5 |  -.5189783    .138198     -3.755   0.000      -.7898415   -.2481152
     br6 |  -.9047063   .1378488     -6.563   0.000      -1.174885   -.6345276
     br7 |  -.6101601   .1411578     -4.323   0.000      -.8868242   -.3334959
     br8 |  -.4011666   .1067493     -3.758   0.000      -.6103914   -.1919418
   size2 |  -.1171984   .1234807     -0.949   0.343      -.3592161    .1248193
   size3 |  -.1857225   .1150953     -1.614   0.107      -.4113052    .0398602
   size4 |  -.2317558   .1277846     -1.814   0.070       -.482209    .0186974
   size5 |  -.1928613   .1299813     -1.484   0.138      -.4476198    .0618973
   size6 |  -.1354161   .1326755     -1.021   0.307      -.3954552    .1246231
   size7 |  -.1029416   .1237926     -0.832   0.406      -.3455707    .1396876
     ost |   .0188207   .0685209      0.275   0.784      -.1154779    .1531192
     ak1 |    .049323   .0838747      0.588   0.556      -.1150684    .2137144
    ake1 |   .0640078   .0817843      0.783   0.434      -.0962865    .2243021
     ex1 |  -.0000597   .0000775     -0.771   0.441      -.0002116    .0000922
---------+--------------------------------------------------------------------
   _cut1 |  -2.148618   .8480698            (Ancillary parameters)
   _cut2 |  -1.678518   .8476044
   _cut3 |  -1.089189   .8473871
   _cut4 |  -.3600422   .8471627
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =  145.99
         Prob > chi2 =    0.0000


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
```

```
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    4.51
         Prob > chi2 =    0.6084


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =    3.40
         Prob > chi2 =    0.3344


.
. cap drop hv

.
. /*============================*/
. /*** horizontal spillovers ***/
. /*============================*/
. replace hiaunc=hiaunc
(0 real changes made)

. replace hunc=hunc
(0 real changes made)

. * uncentered correlation
. gen hv=info_4!=.&innoint !=.&hunc !=.&br2!=.& size2!=.& ost!=.&ak1!=.&ake1!=.
> &ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_4 innoint hunc br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -1965.1801
Iteration 1:   log likelihood = -1945.4815
Iteration 2:   log likelihood = -1945.4805

Ordered probit estimates                          Number of obs   =       1261
                                                  LR chi2(19)     =      39.40
                                                  Prob > chi2     =     0.0039
Log likelihood = -1945.4805                       Pseudo R2       =     0.0100

------------------------------------------------------------------------------
      info_4 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |    .024388   .0375368      0.650   0.516      -.0491828    .0979588
        hunc |   .0506819   .0312894      1.620   0.105      -.0106442     .112008
         br2 |   .0603269   .1240562      0.486   0.627      -.1828187    .3034725
         br3 |   .0809667   .1126704      0.719   0.472      -.1398632    .3017967
         br4 |    .063231   .1093376      0.578   0.563      -.1510669    .2775288
         br5 |  -.0674573   .1408307     -0.479   0.632      -.3434804    .2085657
         br6 |  -.3550559   .1307343     -2.716   0.007      -.6112904   -.0988214
         br7 |  -.1720618   .1372952     -1.253   0.210      -.4411554    .0970317
         br8 |   .2823537   .1272286      2.219   0.026       .0329902    .5317173
       size2 |   -.101236   .1198044     -0.845   0.398      -.3360483    .1335764
       size3 |  -.0289978   .1109813     -0.261   0.794      -.2465172    .1885215
       size4 |  -.0768393   .1228153     -0.626   0.532      -.3175529    .1638743
       size5 |  -.0788088   .1253372     -0.629   0.529      -.3244652    .1668475
       size6 |   .1294211   .1273331      1.016   0.309      -.1201471    .3789894
```

```
   size7 |  -.0391546   .1197932     -0.327   0.744       -.273945    .1956358
     ost |   .0007893   .0656584      0.012   0.990      -.1278988    .1294775
     ak1 |   .0717145    .080577      0.890   0.373      -.0862135    .2296426
    ake1 |   .0602855   .0781712      0.771   0.441      -.0929272    .2134983
     ex1 |  -.0000225   .0000296     -0.761   0.447      -.0000804    .0000354
---------+--------------------------------------------------------------------
   _cut1 |  -.8805823   .1337895             (Ancillary parameters)
   _cut2 |  -.3193256   .1325545
   _cut3 |   .4423511    .132476
   _cut4 |   1.316166   .1358428
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   26.17
         Prob > chi2 =    0.0005


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    4.97
         Prob > chi2 =    0.5470


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =    4.48
         Prob > chi2 =    0.2143



.
. cap drop hv

.
. * ADAMS
. replace hiaadams=hiaadams
(0 real changes made)

. replace hadams=hadams
(0 real changes made)

. gen hv=info_4!=.&innoint !=.&hiaadams !=.&hadams !=.&br2!=.& size2!=.& ost!=.
> &ak1!=.&ake1!=.&ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.
```

```
. oprobit info_4 innoint hadams br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -2120.8076
Iteration 1:   log likelihood = -2103.3387
Iteration 2:   log likelihood = -2103.3379

Ordered probit estimates                          Number of obs   =       1360
                                                  LR chi2(19)     =      34.94
                                                  Prob > chi2     =     0.0142
Log likelihood = -2103.3379                       Pseudo R2       =     0.0082

------------------------------------------------------------------------------
      info_4 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .0161431   .0362846      0.445   0.656      -.0549733    .0872596
      hadams |   .0442148   .0286743      1.542   0.123      -.0119858    .1004154
         br2 |   .0734855   .1201438      0.612   0.541      -.1619921    .3089631
         br3 |   .0928426   .1080966      0.859   0.390      -.1190227     .304708
         br4 |   .0492564   .1051276      0.469   0.639      -.1567899    .2553027
         br5 |  -.0251428    .133243     -0.189   0.850      -.2862942    .2360087
         br6 |  -.3073257   .1257543     -2.444   0.015      -.5537996   -.0608519
         br7 |  -.1694136   .1299733     -1.303   0.192      -.4241565    .0853294
         br8 |   .2450318   .1221331      2.006   0.045       .0056554    .4844082
       size2 |  -.1301814   .1141242     -1.141   0.254      -.3538608     .093498
       size3 |  -.0663498   .1068501     -0.621   0.535      -.2757721    .1430725
       size4 |  -.0627415   .1187878     -0.528   0.597      -.2955612    .1700783
       size5 |   -.109358   .1198036     -0.913   0.361      -.3441688    .1254528
       size6 |   .0821983    .123009      0.668   0.504      -.1588948    .3232915
       size7 |  -.0175638   .1157099     -0.152   0.879       -.244351    .2092234
         ost |   .0101323   .0631634      0.160   0.873      -.1136658    .1339303
         ak1 |   .0705702   .0779431      0.905   0.365      -.0821955    .2233359
        ake1 |   .0485855   .0759242      0.640   0.522      -.1002232    .1973941
         ex1 |  -.0000168   .0000253     -0.664   0.506      -.0000665    .0000328
-------------+----------------------------------------------------------------
       _cut1 |  -.8896169   .1269203             (Ancillary parameters)
       _cut2 |  -.3375559   .1257001
       _cut3 |   .4222526   .1256736
       _cut4 |   1.285467   .1289093
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   22.39
         Prob > chi2 =    0.0022


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0
```

```
          chi2(  6) =    4.70
        Prob > chi2 =    0.5829


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

          chi2(  3) =    3.93
        Prob > chi2 =    0.2688


.
. cap drop hv

.
. * Inkmann
. replace hiainkma=hiainkma
(0 real changes made)

. replace hinkma=hinkma
(0 real changes made)

. gen hv=info_4!=.&innoint !=.&hiainkma !=.&hinkma !=.&br2!=.& size2!=.& ost!=.
> &ak1!=.&ake1!=.&ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_4 innoint hinkma br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -2225.9015
Iteration 1:   log likelihood = -2209.7847
Iteration 2:   log likelihood = -2209.7841

Ordered probit estimates                          Number of obs   =       1429
                                                  LR chi2(19)     =      32.23
                                                  Prob > chi2     =     0.0294
Log likelihood = -2209.7841                       Pseudo R2       =     0.0072

------------------------------------------------------------------------------
  info_4 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
---------+--------------------------------------------------------------------
 innoint |   .0141315   .0352717      0.401   0.689      -.0549998    .0832628
  hinkma |   .0073536   .0280584      0.262   0.793      -.0476399    .0623471
     br2 |   .0686856   .1172537      0.586   0.558      -.1611275    .2984987
     br3 |   .1068374   .1050854      1.017   0.309      -.0991262    .3128009
     br4 |   .0710231   .1026734      0.692   0.489      -.1302131    .2722593
     br5 |  -.0505605    .130806     -0.387   0.699      -.3069356    .2058145
     br6 |  -.2964123   .1214924     -2.440   0.015      -.5345331   -.0582916
     br7 |  -.1993163   .1283241     -1.553   0.120      -.4508268    .0521943
     br8 |   .1380112   .1189003      1.161   0.246       -.095029    .3710514
   size2 |  -.0929583   .1116655     -0.832   0.405      -.3118186    .1259021
   size3 |  -.0478613   .1049557     -0.456   0.648      -.2535708    .1578482
   size4 |  -.0513204   .1164636     -0.441   0.659       -.279585    .1769441
   size5 |  -.1195791   .1170056     -1.022   0.307       -.348906    .1097477
   size6 |   .1070917   .1205107      0.889   0.374      -.1291049    .3432883
   size7 |  -.0202388   .1132101     -0.179   0.858      -.2421265    .2016489
     ost |   .0276267   .0613889      0.450   0.653      -.0926934    .1479468
     ak1 |   .0445956   .0734258      0.607   0.544      -.0993164    .1885076
    ake1 |   .0575678   .0683631      0.842   0.400      -.0764214     .191557
     ex1 |  -.0000164   .0000253     -0.649   0.517      -.0000661    .0000332
---------+--------------------------------------------------------------------
   _cut1 |  -.8904116   .1251644            (Ancillary parameters)
```

```
   _cut2 |  -.3419955   .1239611
   _cut3 |   .4263939    .123963
   _cut4 |   1.287225   .1271112
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   20.06
         Prob > chi2 =    0.0054


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    5.10
         Prob > chi2 =    0.5316


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =    3.22
         Prob > chi2 =    0.3596


.
. cap drop hv

.
. * Geo
. replace hiageo=hiageo
(0 real changes made)

. replace hgeo=hgeo
(0 real changes made)

. gen hv=info_4!=.&innoint !=.&hiageo !=.&hgeo !=.&br2!=.& size2!=.& ost!=.&ak1
> !=.&ake1!=.&ex1!=.&kupg1 !=.&kudl1 !=.&kugk1!=.

. oprobit info_4 innoint hgeo br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -2216.2537
Iteration 1:   log likelihood = -2198.0257
Iteration 2:   log likelihood = -2198.0251

Ordered probit estimates                          Number of obs   =       1423
```

```
                                                  LR chi2(19)     =      36.46
                                                  Prob > chi2     =     0.0093
Log likelihood = -2198.0251                       Pseudo R2       =     0.0082

------------------------------------------------------------------------------
      info_4 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .0088203   .0353636      0.249   0.803      -.0604912    .0781317
        hgeo |    .048919   .0234421      2.087   0.037       .0029733    .0948647
         br2 |   .1122434   .1158986      0.968   0.333      -.1149137    .3394006
         br3 |   .1305207   .1056925      1.235   0.217      -.0766329    .3376742
         br4 |   .0397507    .104967      0.379   0.705      -.1659808    .2454822
         br5 |   .0037755   .1291803      0.029   0.977      -.2494134    .2569643
         br6 |  -.2978055   .1218546     -2.444   0.015      -.5366361   -.0589749
         br7 |   -.203826   .1283729     -1.588   0.112      -.4554323    .0477802
         br8 |    .232316   .1110447      2.092   0.036       .0146724    .4499596
       size2 |  -.1001757   .1116211     -0.897   0.369      -.3189491    .1185977
       size3 |  -.0620698   .1051013     -0.591   0.555      -.2680645    .1439249
       size4 |  -.0581514   .1160698     -0.501   0.616      -.2856441    .1693412
       size5 |  -.1305951   .1175873     -1.111   0.267      -.3610619    .0998717
       size6 |   .0720745   .1207624      0.597   0.551      -.1646154    .3087645
       size7 |  -.0326775   .1140207     -0.287   0.774      -.2561539    .1907989
         ost |   .0284576   .0615627      0.462   0.644       -.092203    .1491183
         ak1 |   .0371145   .0737617      0.503   0.615      -.1074558    .1816849
        ake1 |   .0560322     .06849      0.818   0.413      -.0782057    .1902702
         ex1 |  -.0000183   .0000253     -0.722   0.470       -.000068    .0000314
-------------+----------------------------------------------------------------
       _cut1 |  -.7897569    .133675             (Ancillary parameters)
       _cut2 |  -.2370769   .1326528
       _cut3 |   .5300748   .1328042
       _cut4 |   1.398088   .1361298
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   25.23
         Prob > chi2 =    0.0007


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    4.22
         Prob > chi2 =    0.6472


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
```

```
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =    2.86
         Prob > chi2 =    0.4130


.
. cap drop hv

.
. * Inkmann/Pohlmeier
. replace hiainkpo=hiainkpo
(0 real changes made)

. replace hinkpo=hinkpo
(0 real changes made)

.
. oprobit info_4 innoint hinkpo br2-br8 size2-size7 ost ak1 ake1 ex1

Iteration 0:   log likelihood = -1972.1014
Iteration 1:   log likelihood = -1952.2946
Iteration 2:   log likelihood = -1952.2936

Ordered probit estimates                          Number of obs   =       1266
                                                  LR chi2(19)     =      39.62
                                                  Prob > chi2     =     0.0037
Log likelihood = -1952.2936                       Pseudo R2       =     0.0100

------------------------------------------------------------------------------
      info_4 |      Coef.   Std. Err.       z     P>|z|       [95% Conf. Interval]
-------------+----------------------------------------------------------------
     innoint |   .0239835   .0375323      0.639   0.523      -.0495785    .0975456
      hinkpo |   .0482993   .0305263      1.582   0.114      -.0115312    .1081298
         br2 |   .0605115   .1226757      0.493   0.622      -.1799284    .3009514
         br3 |   .0767121   .1124179      0.682   0.495       -.143623    .2970472
         br4 |     .06037   .1096816      0.550   0.582       -.154602    .2753419
         br5 |  -.0721736   .1399953     -0.516   0.606      -.3465594    .2022122
         br6 |   -.359771   .1308118     -2.750   0.006      -.6161575   -.1033846
         br7 |  -.1823069   .1369384     -1.331   0.183      -.4507013    .0860874
         br8 |   .2705968   .1246639      2.171   0.030         .02626    .5149335
       size2 |  -.0961795   .1195169     -0.805   0.421      -.3304283    .1380692
       size3 |  -.0246594   .1108655     -0.222   0.824      -.2419518    .1926329
       size4 |  -.0888801   .1224679     -0.726   0.468      -.3289128    .1511525
       size5 |  -.0868412   .1250295     -0.695   0.487      -.3318945     .158212
       size6 |   .1467448   .1272917      1.153   0.249      -.1027423    .3962318
       size7 |  -.0179278   .1199074     -0.150   0.881       -.252942    .2170864
         ost |   .0176334   .0654187      0.270   0.788       -.110585    .1458517
         ak1 |   .0856729   .0807306      1.061   0.289      -.0725561    .2439019
        ake1 |    .036313   .0783585      0.463   0.643      -.1172668    .1898928
         ex1 |   -.000023   .0000296     -0.779   0.436       -.000081    .0000349
-------------+----------------------------------------------------------------
       _cut1 |  -.8068341   .1428499            (Ancillary parameters)
       _cut2 |  -.2496216   .1418377
       _cut3 |   .5198002   .1417604
       _cut4 |   1.387667    .145093
------------------------------------------------------------------------------

. test br2 br3 br4 br5 br6 br7 br8

 ( 1)  br2 = 0.0
 ( 2)  br3 = 0.0
```

```
 ( 3)  br4 = 0.0
 ( 4)  br5 = 0.0
 ( 5)  br6 = 0.0
 ( 6)  br7 = 0.0
 ( 7)  br8 = 0.0

           chi2(  7) =   25.96
         Prob > chi2 =    0.0005


. test size2 size3 size4 size5 size6 size7

 ( 1)  size2 = 0.0
 ( 2)  size3 = 0.0
 ( 3)  size4 = 0.0
 ( 4)  size5 = 0.0
 ( 5)  size6 = 0.0
 ( 6)  size7 = 0.0

           chi2(  6) =    5.95
         Prob > chi2 =    0.4283


. test ak1 ake1 ex1

 ( 1)  ak1 = 0.0
 ( 2)  ake1 = 0.0
 ( 3)  ex1 = 0.0

           chi2(  3) =    4.02
         Prob > chi2 =    0.2594


.
. cap drop hv

.
. log close
```